REMARKS

Claims 1-23 are currently pending in the application; with claims 1 and 9 being independent. Claims 1, 4, 9, and 12 have been amended to better define the present invention; claims 2-8 and 10-16 have been amended to modify claim dependencies. Claims 17-23 have been added to define additional aspects of the invention.

Applicants request consideration in light of the remarks and claim amendments presented herein, and earnestly seek time allowance of the pending claims.

Claim Objections

In the outstanding Office Action, the Examiner objected to claims 13 and 14 under 37 CFR 1.75(c) as being in improper multiple dependent form. Applicants submit that claims 13 and 14 are proper multiple-dependent claims. A multiple dependent claim is improper when it depends from another multiple dependent claim. In this case, multiple dependent claims 13 and 14 depend from claims 10, 11, 12, and 18, which are not multiple dependent claims. Accordingly, because claims 13 and 14 are in proper multiple dependent claim format, Applicants respectfully request the Examiner withdraw the objection to these claims.

Double-Patenting Rejection

The Examiner rejected claims 1-16 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of US Patent No. 6,720,914 ('914). The Examiner asserts that claims 1-16 of the instant application are "read over" the features of

claims 1-8 in '914. Applicants respectfully disagree and traverse this rejection.

Regarding claims 1 and 9, '914 discloses a carrier-phase-based relative positioning device employing a single processing method, which makes it possible to continue estimation of integer ambiguity values even when the number of positioning satellites has changed, determining an integer ambiguity value by efficiently verifying the integer ambiguities in a short, and calculate a base line vector (abstract). Specifically, claim 1 of '914 includes the recitation "wherein an new integer ambiguity is estimated...when the number of positioning satellites has changed, or when the reference antenna has been switched."

However, '914 fails to disclose, at least, "wherein an new integer ambiguity is estimated...when the number of positioning satellites has changed, or when the reference position satellite has been switched," as recited in claim (emphasis added). Applicants submit that the '914 reference is distinguished by the present invention in that switching a reference antenna is different than switching a reference position satellite, as recited in claim 1. Accordingly, because the claims of the '914 patent fails to teach or suggest all of the features recited in claim 1, it cannot be used as the sole basis for a obviousness-type double patenting rejection.

Accordingly, Applicants respectfully request the Examiner withdraw the rejection of claim. 1.

Claims 2-8 indirectly depend from claim 1 and are also allowable at least by virtue of their dependency from allowable claim 1. Applicants submit method claim 9 is allowable at least for the reasons provided above in the arguments for the allowability of claim 1. Claims 10-16 indirectly depend from claim 9 and are allowable by virtue of their dependency from

allowable claim 9.

Claim Rejection – 35 USC §102

The Examiner rejected claims 1-16 under 35 USC 102(e) as being anticipated by US Patent No. 6,611,228 to Toda et al. ("Toda"). Applicants submit the Examiner has failed to establish a *prima facie* case of anticipation and traverse this rejection.

Regarding claims 1 and 9, Toda discloses a carrier-phase-based relative positioning apparatus comprising a plurality of antennas, of which at least one is installed on a mobile unit. The apparatus determines the position of each antenna other than one antenna used as a reference antenna relative to the reference antenna by receiving radio signals transmitted from the plurality of position-fixing satellites with multiple antennas, observing a single-difference phase or double-difference phase, and calculating an integer ambiguity of the single-difference phase or the double-difference phase (abstract). Moreover, Toda discloses a carrier-phase-based relative positioning apparatus, which is capable of improving the reliability of calculated integer ambiguities, shorten the time required for determining one set of correct integer ambiguities from a plurality of candidates, and make a more reliable judgment on a cycle slip, which could occur even after determining correct integer ambiguities (col. 2, lines 11-21).

However, Toda fails to disclose a "means for estimating an integer ambiguity and a baseline vector...wherein an new integer ambiguity is estimated from the previously estimated base line vector or integer ambiguity when the number of positioning satellites has changed or when the reference position satellite has been switched," as recited in claim 1.

Accordingly, Applicants respectfully request the Examiner to withdraw the rejection of claim 1. Claims 2-8 indirectly depend from claim 1 and are allowable at least by virtue of their

dependency from allowable claim 1. Independent method claim 9 is also allowable at least for the same reasons as provided above in the arguments for the allowability of claim 1. Claims 10-16 indirectly depend from claim 9 and are allowable at least by virtue of their dependency from allowable claim 9.

The Examiner rejected claims 1-16 under 35 USC 102(e) as being anticipated by US Patent No. 6,259,398 to Riley ("Riley"). Applicants disagree and respectfully traverse this rejection.

Regarding claim 1, Riley merely discloses a method and system for performing integer ambiguity resolution for navigational positioning systems (abstract). Specifically, Riley discloses computing a plurality of potentially correct solutions for the baseline vector and integer ambiguities from signals received from the satellite transmitters. One or more tests are then performed on each potential solution, and one of the potential solutions is selected as the correct solution based on the overall performance of the potential solution to every performed test (col. 6, line 57 through col. 7, line 2).

However, Riley fails to disclose, at least, "means for estimating an integer ambiguity and a baseline vector...wherein a new integer ambiguity is estimated from the previously estimated baseline vector or integer ambiguity when the number of positioning satellites has changed or when the reference position satellite has been switched," as recited in claim 1.

Accordingly, Applicants respectfully request the Examiner to withdraw the rejection of claim 1. Claims 2-8 indirectly depend from claim 1 and are allowable at least by virtue of their dependency from allowable claim 1.

Independent method claim 9 is allowable at least for the same reasons provided above in

the arguments for the allowability of claim 1. Claims 10-16 indirectly depend from claim 9 and are allowable at least by virtue of their dependency from allowable claim 9.

The Examiner rejected claims 1-16 under 35 USC 102(e) as being anticipated by US Patent No. 6,061,631 to Zhang ("Zhang"). Applicants respectfully traverse this rejection.

Regarding claim 1, Zhang merely discloses methods for the estimation of relative locations of two or more GPS signal antennas relative to each other and for estimating a line of biases associated with each signal processing channel associated with each GPS signal antenna (abstract). Zhang further discloses utilizing double-difference analysis to accurately determine phase integer ambiguities, and using single-difference analysis to estimate the line biases for the signal processing channels (col. 11, lines 18-20).

However, Zhang fails to disclose, at least, "means for estimating an integer ambiguity and a baseline vector...wherein a new integer ambiguity is estimated from the previously estimated baseline vector or integer ambiguity when the number of positioning satellites has changed or when the reference position satellite has been switched," as recited in claim 1.

Accordingly, Applicants respectfully request the Examiner to withdraw the rejection of claim 1. Claims 2-8 indirectly depend from claim 1 and are allowable at least by virtue of their dependency from allowable claim 1.

Independent method claim 9 is allowable at least for the reasons provided above in the arguments for the allowability of claim 1. Claims 10-16 indirectly depend from claim 9 and are allowable at least by virtue of their dependency from allowable claim 9.

Conclusion

In view of the above amendments and remarks, this application appears to be in condition for allowance and the Examiner is, therefore, requested to reexamine the application and pass the claims to issue.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at telephone number (703) 205-8000, which is located in the Washington, DC area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By #39,491

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